Birds of the main university campus in Dar es Salaam, Tanzania: a ringing study

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Many of Tanzania's bird records are based on early collecting expeditions and very few areas of the country can be considered well known ornithologically.

However, although several authors have called attention to the conservation problems caused by the increasing human populations and effects on natural forests in Tanzania (Howell 1981, Rodgers & Homewood 1982, Stuart 1983) and elsewhere (e.g., see Brown 1981), there appear to be few studies of birds of small disturbed patches of habitat, such as thickets, in Africa. Tyler (1979) and Negere (1980) studied respectively the values of suburban patches and the religious "shrines" to birds of Ethiopia, Harvey & Howell (1987) have produced a list for the Dar es Salaam area.

As Tanzania becomes more densely populated and as man's activities continue to reduce the already highly fragmented natural vegetation, it is important to have an assessment of the effect of these ecological changes on bird populations. Elsewhere, small patches of even highly disturbed vegetation in densely populated urban areas have been shown to serve as refuges for birds; urban cemetries are among the best examples of these (Lussenhop 1978).

In Tanzania, in the past, traditional cultural values and practices favoured leaving small isolated patches of forests relatively untouched as "shrines" or graveyards (pers. obs.). Similarly, small patches of thicket, albeit disturbed, are still present even in suburban environments in many parts of Africa.

The report on birds ringed at the University of Dar es Salaam main campus is an attempt to assess the utilization of disturbed vegetation by birds.

Methods

Study area

The University of Dar es Salaam main campus (6°46S, 39°12E), an area of about 500 ha, is situated 10 km WNW of Dar city centre, and ranges in altitude from 40 to 100 m above sea level. Wingfield (1977) has described the ecology of the campus in detail. He notes that, although the natural vegetation of the campus was once forest, most of this has disappeared due to clearance for agriculture and building. Much of the natural vegetation in the form of large trees and dense thicket remained until 1975. To date, due to an increase in buildings and agriculture, the little natural vegetation remaining and dense secondary growth are found only along very few stream valleys where some birds normally found in coastal thicket can occur.

Study methods

The bird ringing study covers the period July to September 1986, March–April 1987, April 1988, January–December 1989 and May 1990. Birds were caught in mist nets, ringed and released. Because of a shortage of mist nets and numbered EANHS metal rings, a maximum of five 10-m nets have been used, and in 1986 some birds were ringed with coloured rings. Nets were opened from 06:00 to 19:00 hrs and a net check was made every hour.

Results

A total of 622 birds of 77 species has been ringed at the campus. Eight are Palaearctic migrants, and 69 are East African residents of which 26 are forest or forest-edge species.

Table 1. *List of species ringed. Symbols show the species not recorded by Harvey & Howell (1987) for the Dar es Salaam area (*) and or the University campus (†)*

Species	number ringed
Red-eyed Dove *Streptopelia semitorquata* †	2
Emerald-spotted Wood Dove *Turtur chalcospilos*	6
Green Pigeon *Treron australis*	1
Didric Cuckoo *Chrysococcyx caprius*	2
Klaas' Cuckoo *C. klaas* †	2
Yellowbill *Ceuthmochares aereus*	6
White-browed Coucal *Centropus superciliosus*	1
Eurasian Nightjar *Caprimulgus europaeus* †	1
Speckled Mousebird *Colius striatus*	13
Blue-naped Mousebird *Urocolius macrourus*	1
Brown-hooded Kingfisher *Halcyon albiventris*	6
Striped Kingfisher H. *chelicuti*	13
Mangrove Kingfisher H. *senegaloides*	2
Pygmy Kingfisher *Ispidina picta*	10
Little Bee-eater *Merops pusillus* *†	4
Brown-breasted Barbet *Lybius melanopterus*	1
Red-fronted Tinkerbird *Pogoniulus pusillus*	6
d'Arnaud's Barbet *Trachyphonus darnaudii* *†	8
Lesser Honeyguide *Indicator minor* *†	5
Flappet Lark *Mirafra rufocinnamomea*	1
Striped Swallow *Hirundo abyssinica*	1
Eurasian Swallow *H. rustica*	1
African Golden Oriole *Oriolus auratus*	2
Golden Oriole *O. oriolus* †	2
Arrow-marked Babbler *Turdoides jardineii*	2
Rufous Chatterer *T. rubiginosus*	2
Black Cuckoo Shrike *Campephaga flava*	4
Zanzibar Sombre Greenbul *Andropadus importunus*	51
Yellow-bellied Greenbul *Chlorocichla flaviventris*	28
Fischer's Greenbul *Phyllastrephus fischeri* †	2
Northern Brownbul *P. strepitans*	25
Brownbul *P. terrestris*	4
Common Bulbul *Pycnonotus barbatus*	111
White-browed Scrub Robin *Cercotrichas leucophrys*	4
White-browed Robin Chat *Cossypha heuglini*	12
Red-capped Robin Chat *C. natalensis*	9
Nightingale *Luscinia megarhynchos*	1
Great Reed Warbler *Acrocephalus arundinaceus* *†	1
Reed Warbler *A. scirpaceus* *†	3
Yellow-breasted Apalis *Apalis flavida*	1
Grey-backed Camaroptera *Camaroptera brachyura*	22

Species	number ringed
Rattling Cisticola *Cisticola chiniana*	3
Tawn-flanked Prinia *Prinia subflava*	3
Moustached Warbler *Sphenoeacus mentalis* †	1
Garden Warbler *Sylvia borin*	38
Black-headed Batis *Batis minor*	1
Black-throated Wattle-eye *Platysteira peltata*	15
Paradise Flycatcher *Terpsiphone viridis* †	1
Black-backed Puffback *Dryoscopus cubla*	4
Tropical Boubou *Laniarius ferrugineus*	8
Grey-headed Bush Shrike *Malaconotus blanchoti*	1
Sulphur-breasted Bush Shrike *M. sulfureopectus*	10
Brown-headed Tchagra *Tchagra australis*	3
Black-headed Tchagra *T. senegala*	1
Red-backed Shrike *Lanius collurio*	24
Collared Sunbird *Anthreptes collaris* †	2
Little Purple-banded Sunbird *Nectarinia bifasciata*	2
Olive Sunbird *N. olivacea* †	2
Scarlet-chested Sunbird *N. senegalensis* †	7
Mouse-coloured Sunbird *N. veroxii*	5
Grosbeak Weaver *Amblyospiza albifrons*	4
Yellow Bishop *Euplectes capensis*	2
Orange Weaver *Ploceus aurantius* †	5
Black-headed Weaver *P. cucullatus*	3
Masked Weaver *P. intermedius*	13
Spectacled Weaver *P. ocularis*	10
Grey-headed Sparrow *Passer griseus*	1
Pin-tailed Whydah *Vidua macroura*	6
Paradise Whydah *V. paradisaea*	1
Peters' Twinspot *Hypargos niveoguttatus*	49
African Firefinch *Lagonosticta rubricata*	1
Red-billed Firefinch *L. senegala*	2
Green-backed Twinspot *Mandingoa nitidula* †	1
Green-winged Pytilia *Pytilia melba*	7
Cordon-bleu *Uraeginthus angolensis*	2
Bronze Mannikin *Lonchura cucullata*	3
Yellow-rumped Seed-eater *Serinus atrogularis*	2

Discussion

Although the results are from a single method of bird survey (mist-netting) they give a supplement to the list of Harvey & Howell (1987) in which campus birds are indicated. No mist netting was done by these authors during their study, and as a result eight species were not recorded for the Dar es Salaam area and 17 for the campus.

The ringing of d'Arnaud's Barbet shows that this species occurs in the Dar area, not recorded thus by Britton (1980). Despite the secondary nature of the remaining vegetation which is constantly disturbed by human activities, it nevertheless supports a number of species otherwise known to occur as either forest-edge or dense thicket inhabitants. Some, e.g. *Phyllastrephus fischeri* and *Nectarinia olivacea*, are apparent

visitors from forests. It is, however, not clear whether the *Cossypha natalensis* and *Terpsiphone viridis* ringed on the campus were undergoing local or large-scale movements from forests as they are known to be migrants (Britton 1980, N.E. Baker, pers. comm.).

The secondary vegetation on the campus, albeit highly disturbed, in the suburban environment, furthermore provides a "stop-over" or "wintering" point for Palaearctic migrants. Two, *Sylvia borin* and *Lanius collurio*, are present on the campus from November to the end of April as evidenced by ringing (Mlingwa, in prep.) and this is a clear indication that they "winter" in the Dar es Salaam area, although Moreau (1972) has not mentioned this area for these species. However, an influx of *S. borin* is noted in April (Mlingwa, in prep.) when many more individuals are netted in thickets dominated by *Harissonia abyssinica* (Simarobaceae) where it feeds on ripe fruit. The influx of the S. borin in April supports the fact that birds wintering further south in Africa pass along the coast on their way back to the Palaearctic (see Moreau 1972). The other six Palaearctic species ringed on the campus are probably passage migrants in the area.

Thus, even though no strictly forest-dependent species (e.g. Square-tailed Drongo *Dicrurus adsimilis ludwigii*) has been shown to reside in the disturbed thickets, this vegetation is nevertheless ecologically important to a number of species including some apparent visitors from forests, and the Palaearctic migrants. The protection and conservation of such vegetation is recommended, as are further more detailed studies in birds in urban and suburban environments.

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SHORT COMMUNICATIONS

A third Kenya record of Jouanin's Petrel *Bulweria fallax*

On 3 December 1991 I collected an emaciated specimen of *Bulweria fallax* approximately 3 km offshore and 8 km north of Mtwapa Creek, Kenya. This is the furthest south that the species has been recorded off the East African coast. The bird was unable to fly as its plumage was waterlogged and no longer water-resistant. Flight feathers and the plumage generally was so worn and tattered that it must have greatly reduced the bird's powers of flight. Exceptions were the first and second secondaries which were new and still partially sheathed, as were several rectrices. The specimen died in the night after capture and has been deposited in the Ornithological Department of the National Museums of Kenya in Nairobi (specimen No. 911223A).

The state of this petrel's plumage suggested that it had been incapable of flight for some time—certainly many days and perhaps weeks. The prevailing current was flowing to the north and running, at that time, at an estimated 3 knots (*c.* 5.6 km h^{-1}). Prevailing winds were ESE and had been generally southerly through the preceding month at least. There is thus an implicit suggestion that the bird may have become flightless at a point much further south of where it was collected. That the species does, in fact, range far further south than the present three Kenya coastal records is confirmed by A. D. Forbes-Watson (pers. comm.) who handled a specimen that came aboard ship between Aldabra and Mahé in 1990. It would not be surprising, therefore, if the species